

In re Patent Application of:
AMMAR ET AL.
Serial No. 10/647,681
Filing Date: August 25, 2003

REMARKS

Claims 21-24 and 26-40 remain in this application. Claims 1-20 have been previously cancelled in a Preliminary Amendment. Claim 25 is cancelled. Claims 21, 30 and 36 are currently amended. Claims 22-23, 26, 28, 29, 32, 33, 38 and 39 were previously amended.

Applicants thank the Examiner for the detailed study of the application and prior art.

At the outset, Applicants have amended the claims in this After Final Amendment to stress the patentable features of the present invention, which allows an efficient transfer of high frequency radio frequency (RF) signals, such as greater than about 500 MHz. Prior art systems typically required subminiature coaxial connectors (SMA) that work in conjunction with coaxial cables to transfer such high frequency signals. Also, high frequency radio frequency signals up to 4 GHz or more can be transferred with the method and connector system of the present invention.

Applicants stress that the present claimed invention is more than simply eliminating a third free end **50** and associated leg **24** of a prior art power transfer device-to-board electrical connector such as shown in U.S. Patent No. 6,077,130 to Hughes et al. (hereinafter "Hughes"). As noted in Hughes and as set forth in the background section of Hughes, the Hughes connector is similar to the type of connector disclosed in U.S. Patent No. 5,378,160 in which a number of connectors with channels are positioned adjacent to each other to transfer electrical signals with the PC board connector. This type of connector provides a connector having a low profile, high contact element density, good contact

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element durability, extended contact element travel with a wiping action, simplicity and flexibility in installation and economy of manufacture. Thus, Hughes is directed to transferring electrical signals such as a battery DC signal between two circuit boards. This is clearly explained throughout the description.

For example, it is clear in Hughes at column 3 in the last two paragraphs that the legs can be biased against circuit traces on a second circuit board and the "integral terminals and direct connection between the device, which may be a power supply, and both circuit boards 18,20 simultaneously also enables the reliable supply of high electrical currents to the circuit boards in a simple and compact manner" (column 3, lines 44-48). Hughes is specifically directed to an electrical connector for interconnecting a battery and two stacked printed circuit boards. The connector transfers the battery electrical current between the two boards.

The present claimed invention is totally different and specifically directed to transferring RF signals of about 500 MHz or greater frequency, and up to 4 GHz or higher RF signals. This has not been accomplished in prior art systems without the use of subminiature coaxial connectors (SMA) operable with other coaxial connectors. The present claimed invention specifically recites a housing member that is positioned against a first printed circuit board. This member includes a plurality of clip receiving slots. The present invention works by transferring RF signals between the boards via a central conductive clip member connected to a RF signal line.

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In accordance with the present invention, adjacent clip members interconnect ground lines. Other adjacent clip members to the ground lines interconnect DC signal lines. In accordance with the present invention, the RF signals are transferred between the two boards via the central conductive clip member. DC signals are transferred via the clip members interconnecting DC signal lines. Ground connections are transferred via the clip members interconnecting ground lines, such that the clip members interconnecting ground lines not only provide isolation to the clip member that transfers RF signals, but also improves return loss. There is no teaching or suggestion in Hughes or any other prior art for any type of board-to-board connector that can provide this function and suggest such structure as now claimed in this After Final Amendment.

At the most, Hughes teaches the use of transferring DC power or very low frequency signals between two boards using a single connector. Although a number of connectors can be positioned adjacent to each other in accordance with Hughes to transfer power or other signals, nowhere does Hughes suggest the use of such structure and function as in the present claimed invention. At most, Hughes suggests transferring a number of power signals or low frequency signals between different terminals without providing any type of isolation or improvement in return loss.

The results of the present invention are clearly shown in the graph of FIG. 3 in the present application.

Applicants contend that the present case is in condition for allowance and respectfully requests that the Examiner issue a Notice of Allowance and Issue Fee Due.

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If the Examiner has any questions or suggestions for placing this case in condition for allowance, the undersigned attorney would appreciate a telephone call.

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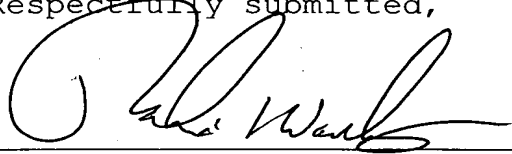
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